

COMPLETE LISTING OF CLAIMS IN THE APPLICATION:

Claims 1-2 (withdrawn)

Claim 3 (currently amended) An isolated nucleic acid molecule comprising the DNA sequence of {SEQ ID NO: 3}.

Claim 4 (currently amended) The isolated nucleic acid molecule of claim 3 comprising a nucleotide sequence that encodes the amino acid sequence shown in {SEQ ID NO: 4}.

Claim 5 (currently amended) An isolated nucleic acid molecule comprising a nucleotide sequence that hybridizes to the nucleotide sequence of Claim 4 ~~or~~ 3 under stringent conditions and encodes a functionally equivalent gene product.

Claim 6 (currently amended) An isolated nucleic acid molecule comprising a nucleotide sequence that hybridizes to the nucleic acid of ~~claim~~ Claim 4 ~~or~~ 3 under moderately stringent conditions and encodes a functionally equivalent TRP8 gene product.

Claim 7 (withdrawn)

Claim 8 (withdrawn)

Claim 9 (currently amended) An isolated polypeptide comprising the amino acid sequence of {SEQ ID NO: 4}.

Claims 10-16 (withdrawn)

Claim 17 (currently amended) A method for identifying a compound that induces or inhibits the perception of a bitter taste comprising:

(i) contacting a cell expressing the TRP8 channel protein of SEQ ID NO: 4 with a test compound and measuring the level of TRP8 activation;

(ii) in a separate experiment, contacting a cell expressing the TRP8 channel protein of SEQ ID NO: 4 with a vehicle control and measuring the level of TRP 8 activation where the conditions are essentially the same as in part (i); and

(iii) comparing the level of activation of TRP8 measured in part (i) with the level of activation of TRP8 in part (ii), wherein an increased level of activated TRP8 in the presence of the test compound indicates that the test compound is a TRP8 inducer of the perception of a bitter taste, and a neutral or decreased level of activation of TRP8 in the presence of the test compound indicates that the test compound is a TRP8 inhibitor of the perception of a bitter taste.